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ABSTRACT

Expanded Internet access to the Ohio Career Information System (OCIS) would provide adults in Ohio who need to or wish to make career changes with the best available information about occupations, education and training programs, and financial aid. In order to determine the feasibility of improving access without cost to users, an advisory group, 4 focus groups, interviews, and a conference call were conducted with stakeholders, directors of career information systems in other states, and technical personnel. Review and integration of the information and suggestions received from these sources led to the following recommendations: (1) OCIS should be made generally available over the Internet to residents of the state; (2) a method to validate residence in Ohio such as entering a valid zip code should be adopted; (3) additional protection such as firewalls against entry into the OCIS operating software should be added to the server; (4) general Internet access to OCIS should be widely publicized; (5) OCIS should be added to the resources available through INFOhio and the Ohio Public Libraries Information Network (OPLIN); and (6) the feasibility of recruiting librarians to provide first-level customer service to OCIS users should be explored. (Contains six references, three tables, and three appendices.) (MO)

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ED 481 591

PROVIDING INTERNET ACCESS TO THE OHIO CAREER INFORMATION SYSTEM FOR ALL RESIDENTS

A FEASIBILITY STUDY

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

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PROVIDING INTERNET ACCESS TO THE OHIO CAREER INFORMATION SYSTEM FOR ALL RESIDENTS:

A FEASIBILITY STUDY

Morgan V. Lewis

Conducted for

Office of Career-Technical and Adult Education
Ohio Department of Education

Conducted by

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FOREWORD

The Center on Education and Training for Employment is pleased to present this report to the Office of Career-Technical and Adult Education, Ohio Department of Education. The report examines the issues involved in making the Ohio Career Information System (OCIS) available to all residents of Ohio via the Internet without direct cost to users.

The study obtained information from a variety of current and potential users and concludes that making OCIS more widely available would facilitate career planning and decision making for many groups that are currently underserved.

The project director, Dr. Morgan Lewis, has asked me to thank the many individuals who contributed to the study. The advisory group listed in Appendix A played a major role in guiding the study. The participants in the focus groups summarized in Appendix B provided the basic information on how their schools and agencies currently use OCIS and how Internet access would facilitate their work. The technical panel added their special knowledge of the electronic infrastructure needed for expanded usage.

On behalf of all of us at Ohio State, a most sincere thank you. We hope the findings and recommendations presented in this report will be useful to the Department of Education and ultimately to all residents of Ohio seeking information on careers.

Monika Aring, Executive Director
Center on Education and Training
for Employment
College of Education

EXECUTIVE SUMMARY

One of the goals of the Ohio Department of Education is to make the Ohio Career Information System available to all residents of the state via the Internet without cost to users. Expanded Internet access would provide adults who need to or wish to make career changes the best available information about occupations, education and training programs, and financial aid. The study examined whether there is a perceived need for such access, the implications of much higher levels of usage for customer support and technology infrastructure, and if general Internet access were to become available, how this could be most effectively communicated to potential users.

Four activities were carried out to assemble information relative to these issues:

1. An advisory group was recruited with representation from those whose clients were judged likely to be frequent users of the Ohio Career Information System (OCIS) if it became more easily accessible.
2. Four focus groups were conducted with representatives of major stakeholders to obtain their assessment of the need for wider Internet access and suggestions on marketing to diverse audiences.
3. Interviews were conducted with the directors of the career information systems of 13 other states that are members of the intoCAREERS network.
4. A conference call was conducted with the individuals who are responsible for the servers that currently host OCIS and two other large electronic resource networks to examine hardware and software implications of expanded Internet access.

Recommendations

Review and integration of the information and suggestions received from these sources led to the following recommendations:

1. The Ohio Career Information System (OCIS) should be made generally available over the Internet to residents of the state.

2. A method to validate residence in Ohio, similar to that used by Illinois, should be adopted.

   Illinois users are asked to enter the ZIP codes for their homes. If valid ZIP codes are entered, a username and password are automatically provided to the users.

3. Additional protection (firewalls) against entry into the OCIS operating software by hackers should be added to the server.

4. General Internet access to OCIS should be widely publicized focusing primarily on individuals preparing for or making career changes.

   Availability and awareness is generally good in middle and high schools. Consequently, the publicity campaign should focus on postsecondary institutions, libraries and public and private agencies serving adults in career transition. A special effort should be made to inform organizations that provide computer access to individuals who do not have computers in their homes.

5. OCIS should be added to the resources available through INFOhio and OPLIN.

6. The Office of Career-Technical and Adult Education should explore with the State Library of Ohio the feasibility of recruiting librarians to provide first-level customer service to OCIS users. The career coordinator network is another potential source of such service that should be examined.

CHAPTER 1

INTRODUCTION

This is the report of a study conducted to examine issues related to making the Ohio Career Information System available to all residents of Ohio via the Internet without cost to users of the system. The study examined whether there is a perceived need for expanded access, the implications of much higher levels of usage for customer support and technology infrastructure, and if general Internet access were to become available, how this could be most effectively communicated to potential users.

The following four activities were carried out to assemble information relative to these issues:

1. An advisory group was recruited with representation from those whose clients were judged likely to be frequent users of the Ohio Career Information System (OCIS) if it became more easily accessible. This group had representation from state agencies as well as parents, school counselors, and public and school librarians.
2. Four focus groups were conducted with representatives of major stakeholders to obtain their assessment of the need for wider Internet access and suggestions on marketing to diverse audiences and on the professional development that would be needed by those who will assist users.
3. Interviews were conducted with the directors of the career information systems of 13 other states that are members of the intoCAREERS network. The focus was on how these states provide Internet access and how they pay for their systems.
4. A conference call was conducted with the individuals who are responsible for the servers that currently host OCIS and two other large electronic resource networks to examine hardware and software implications of expanded Internet access.

The report presents the results produced by these activities. The remainder of this chapter describes the current OCIS. The chapters that follow this introduction present the main findings from the focus groups, the state interviews, and the conference call. The final chapter integrates the results from all four sources and presents recommendations for next steps. A list of acronyms used in the report and these three appendices follow the chapters:

A. List of members of the advisory group
B. Reports of the separate focus groups

C. Summaries of the interviews with the Career Information System (CIS) directors of 13 other states in the intoCAREERS network

The Current System in Ohio

Ohio is a member of intoCAREERS, a 15-state consortium that licenses the use of the software used in the CIS of 14 of these states. Washington does not use the software, but does license occupational information. The national office of intoCAREERS is a unit of the College of Education, University of Oregon.

Each of the states negotiates an agreement with the national office that give that state the right to distribute a CIS which includes the proprietary software developed by intoCAREERS and information specific to the state about occupations, education and training programs, and financial aid. The methods used to distribute the CISs vary widely across the states. Ohio distributes OCIS to those that purchase site licenses. Sale of these licenses is limited to public and nonprofit private entities at a cost of $250 per site for an annual license. Ohio pays intoCAREERS an annual fee of $352,000 for the right to sell site licenses. This fee also pays for ongoing services including the updating of the Ohio-specific information in OCIS twice a year.

Those that purchase site licenses receive CDs with the OCIS software for Windows and Macintosh computers and usernames and passwords for accessing the Internet version of OCIS. The computer version can be loaded on all computers at one site, such as a school or library, but additional licenses have to be purchased for different locations. Table 1, on the following page, shows the number of licenses that have been purchased for the current year by the type of sites where OCIS is being used.

The Internet version of OCIS runs on a Windows 2000 server equipped with dual 750mhz Pentium III XEON processors and 1GB of RAM, consuming approximately 6GB's of disk space (including log files, temporary files, database, etc). The server is located in the State of Ohio Computer Center in Columbus where it links with the Department of Administrative Services network that serves all state agencies, public schools, and postsecondary institutions, essentially a statewide 'intranet." Authentication of valid Internet users is done by intoCAREERS that checks for usernames and passwords that have been issued by the Ohio OCIS office.

The office of the Ohio Department of Education that administers OCIS estimates its costs will be approximately $450,000 for the current fiscal

year. This covers overall management including the issuing of site licenses, assigning and registering usernames and passwords, customer service and technical support, and training of users.

Table 1

Site Licenses for OCIS Purchased for 2002-03 School Year
by Type of Institution

Institution	Number
High and Middle/Junior High Schools	
Public high schools	758
Non-public high schools	37
Public junior high schools	83
Public middle schools	233
Non-public junior high schools	1
Non-public middle schools	2
Career Tech/Vocational Schools/Adult	91
Community Colleges	8
Colleges & Universities	15
Ohio Department of Job and Family Services	166
Ohio Rehabilitation Services Commission	47
Public Libraries	107
Social Service Agencies	13
Other	42
Total	1,603

As can be seen by multiplying the number of site licenses in Table 1 by the $250 fee, approximately half of current funding comes from the sale of these licenses. If OCIS were to become available via the Internet without the need to purchase site licenses, this funding would obviously have to be replaced from other sources. This issue and others associated with providing Internet access to all residents are discussed in the following chapters.

CHAPTER 2

FOCUS GROUPS

Focus groups were conducted in the four geographic quarters of the state with individuals who are familiar with the Ohio Career Information System (OCIS). The questions presented in italics below were sent to all who accepted invitations to take part in these focus groups. The summaries of the responses to these questions represent the prevailing opinions across all four groups. The final section of the chapter describes how the participants for the focus groups were recruited and presents the number of each stakeholder group represented.

The participants, it should be noted, were highly selected. The representatives of public education were nominated because they were known to be interested, active users of OCIS. From the lists of site licenses provided by the Ohio Department of Job and Family Services only those with e-mail addresses were contacted. And all those who participated had to travel to the focus groups, a trip that for most was a 30 to 60 mile trip, one-way. The focus group results thus reflect the opinions of individuals who are quite interested in the accessibility of career information, and may not be the same as what would be obtained from a more representative sample of their colleagues.

Do you see a need to have OCIS available via the Internet so any resident of Ohio could use it without cost?

All four groups agreed that there is a need for general Internet access. The groups cited as most likely to benefit from such access include the following:

- ✓ Parents of students who access OCIS at school
- ✓ Clients of one-stop centers operated by private companies
- ✓ Clients of community- and faith-based organizations, such as Urban League and Catholic Social Services
- ✓ Clients of the Rehabilitation Services Commission
- ✓ College students
- ✓ Students in charter schools
- ✓ Students who are home schooled

Parents were the group most frequently mentioned as benefiting from wider Internet access. Several of the counselors in the groups noted that when they meet with parents and review OCIS information, the parents often ask if they can access OCIS on the Internet. For about half the parents, the answer to this question is "Yes," without any expansion in

access. If their students have Internet access from school, parents can currently access OCIS from their home computers using the same username and password provided to their students. At present, however, about half of the schools prefer the CD version and do not request Internet access for their students.

Adults in career transitions were mentioned as benefiting from Internet access in all groups. Some of these are clients of one-stop centers funded by the Workforce Investment Act, and most of these centers already have OCIS available. Under current state law, however, one-stop centers that are operated by private, for-profit companies, such as the one serving Clermont County, cannot purchase OCIS. Community and faith-based organizations that serve adults seeking job training and employment would certainly benefit from easier Internet access. Many of these organizations also conduct youth programs that emphasize career awareness and planning. OCIS would be a valuable resource to these programs.

The point was also made in each of the groups that general Internet access would benefit adults who are not clients of any agency or organization. Almost all adults change jobs several times in their careers. Most adults 40 and younger in Ohio have been exposed to OCIS while in school, and Internet access could be a valuable resource to them when they make career changes.

Representatives of the Rehabilitation Services Commission participated in each of the focus groups and all thought Internet access would be helpful to their clients. One reported that at present after clients have explored training or employment possibilities, the results of their searches are printed out and mailed to them. With the Internet, clients could access the information directly. One Rehabilitation Services participant was not aware that OCIS was already available via the Internet. He only uses the version loaded on his computer.

Those incarcerated in adult and youth correctional facilities were also mentioned as benefiting from Internet access, but this comment was poorly informed. A colleague, Dr. Susan Nell, who directs a professional development program for teachers in correctional institutions, indicates that Internet access is totally banned. In a personal communication dated February 27, 2003 she states:

> Inmates are strictly forbidden from any access to the Internet. . . . This [ban on Internet access] also has continued to create problems for my teachers as they have very limited access.

Dr. Nell does not expect this policy to change in the foreseeable future.

Internet access will not benefit low-income individuals who do not have computers in their homes. A concentrated information campaign targeted to libraries, one-stop and neighborhood centers could increase OCIS availability to those without home computers.

Do you think a person who has no experience with OCIS could use it over the Internet without assistance?

Each of the groups suggested that it would be helpful to have more introductory information on the home page. This might take the form of a PowerPoint overview or flowchart that shows how the different components fit together. For users who want more guidance, the tutorial that comes with the CD versions could be made available online. Other online assistance could include a list of frequently asked questions, pop-ups with specific instructions, and directions on how to get additional help.

Some of the guidance counselors reported that their school districts would welcome the chance to provide help to OCIS users who encounter difficulties. Districts are eager to demonstrate to all residents, not just those with children in school, how they serve their taxpayers. A list of districts with OCIS could be added to the website and users directed to choose the one they want to respond to their requests. The requests would be received by the school district webmaster and forwarded to those on the district staff who are most familiar with OCIS.

> [Members of the advisory group questioned whether all guidance counselors would be as receptive to providing this service as those who participated in the focus groups. These members thought the network of career coordinators would be a better source of first-level customer support. There are career coordinators assigned to work with all school districts in the state.]

Another option was to solicit the cooperation of the "Ask a Librarian" service that many local libraries offer. (A Google© search on December 26, 2002 with the words "Ask a Librarian" yielded 380,000 web addresses.) Special training could be provided for librarians who provide this service so they could deal with the simpler questions and refer more complicated requests to appropriate agencies such as schools, one-stop centers, and the Rehabilitation Services Commission.

Analysis of the kinds of questions submitted could identify the most common problems that users encounter.

Questions were raised about the possible impact of slow transmission. It is assumed that most home user would access the Internet with a dial-up, telephone line connection. Will this provide adequate downloads of information or will users become frustrated and stop waiting?

Limited English proficiency and poor reading ability are other barriers that were identified.

Much of the discussion of this question concerned features of OCIS that the users find to be troublesome. Often, they reported, the answers provided in the occupational sort eliminate all possible occupations. One counselor said that because of this, she had stopped using this component. Another noted that the CD version of OCIS has a circle that shrinks each time a question is answered and a pop-up that tells the percentage of jobs that will be eliminated by certain answers. She felt this was helpful and should be included in the Internet version. Another possibility is to add a pop-up that stressed the distinction between "liking" an activity and "willing to do it." All of the items in the sort do have the following instruction: "Consider the type of work you would be willing to do." If a person is willing to do an activity, many more possibilities are open, and emphasizing "willing to do" would in most cases yield a wider range of occupational options.

Preparation for many occupations can be obtained through either a two-year associate degree or four-year bachelor's degree. A participant in one of the groups would like OCIS to present some discussion of the advantages and disadvantages at each level.

Missing job titles were also mentioned as a problem. Massage therapist was given as an example.

If OCIS were available to all residents on the Internet, what would be the best ways to inform potential users about it?

Following standard marketing practice, the potential users for OCIS should be defined and the ways to reach those users selected. One group defined potential users as those preparing for careers or in career transitions. If this definition is accepted, it argues for targeting an information campaign to those who serve these potential users. These methods were suggested:

- ✓ Posters with "take-away" cards and brochures listing the URL for public access to OCIS
- ✓ Announcements in newsletters and workshops at annual conventions of associations of service providers

- ✓ Announcements and links from existing networks and school and school district websites
- ✓ Ensure OCIS features words and phrases commonly used in World Wide Web search engines to seek career/occupational information

Some of the participants recalled that the Department of Education has used posters in the past to publicize OCIS and their impression was that these had been effective. It was recommended that poster be distributed to locations that are visited by large numbers of the public, such as libraries, county departments of Job and Family Services, and Deputy Registrar offices.

One of the easiest ways to publicize would be to make OCIS one of the resources available from existing state networks, especially INFOhio, which is directed to public education, and OPLIN, which serves public libraries. Both of these networks provide links to electronic resources available over the Internet.

The discussion of publicizing Internet availability touched on the difficulties of reaching those without home computers. It was suggested that the newsletters of organizations serving low income clients would be a possibility. News releases listing locations that offer Internet access to OCIS could be distributed with a request that they be included in their newsletters. Local school district newsletters were mentioned as another possibility. Many districts send these to all residents of the areas they serve, not just those with students in school.

Will having OCIS available to all residents via the Internet cause any problems for those who now provide access?

Minimal problems are anticipated for those now providing access. Some participants expect that general Internet access would make their work easier, not harder. If general public access overloaded servers, however, this would have real implications. If most usage by the general public is in the evenings and on weekends, as seems likely, this would not compete with usage from schools and agencies.

Clients using OCIS on their own may set unrealistic occupational goals but this is an inherent problem in career planning especially for those with barriers such as poor basic reading and mathematic skills and little or no prior employment.

One option would be to make public libraries the site for expanded Internet access. How effective do you think this approach would be?

All groups endorsed using libraries to increase awareness and usage, but none would like to see this as the only way of providing general Internet access. Limiting general access to libraries would not serve rural areas very well. Nor would it serve private organizations that provide assistance in career planning to their clients.

If OCIS is to be offered to all residents of Ohio on the Internet, what type of identification could be required to verify that those requesting access are actual residents?

There is no foolproof method of using general public information, such as a ZIP or telephone area codes. Nonresidents could easily find such information if they wanted to. Many people would be reluctant to enter personal identification, such as a Social Security or driver's license number.

If licensing restrictions for certain components require limitations to Ohio residents, the participants would like to see an Internet version without those components available to everyone.

One Wish for OCIS

To conclude the focus groups, the participants were asked the "one wish" they would have for OCIS, the one thing they would most like to see become reality. The most frequent wishes were for general public access and greater visibility, for more potential users to know about the system and the information that it can provide. Specific wishes are presented in the reports of the separate focus groups (Appendix B).

Conducting the Groups

Two main sources provided names of OCIS users to whom invitations to participate in the focus groups were sent: the career coordinators assigned to the career and technical education planning districts in the state and the Labor Market Information Bureau, Ohio Department of Job and Family Services (ODJFS). The career coordinators nominated school personnel in their areas whom they knew as active users of OCIS. The Bureau provided lists of state and county agencies for which it purchases site licenses for OCIS. All 53 nominated by the career coordinators were

contacted as were the 37 with e-mail addresses on the lists provided by the Bureau. The state PTA office also recruited two of its state officers to participate in the northeast focus group. The numbers that participated in the four groups are show in Table 2 on the following page.

Three individuals who were invited but could not take part in the groups submitted written answers to the focus group questions. The 26 who participated out of the 92 who were invited thus represent a 28 percent participation rate. When the three written answers are added, the participation rate increases to 34 percent.

Table 2

Participants in Focus Groups

	North-east	South-east	South-west	North-west	Total
Guidance counselors	3	2	1	2	8
Rehabilitation Services Comm.	1	1	1	1	4
Workforce development, CDJFS	1	1	1		3
Career coordinators, ODE	1	1		1	3
Librarians/Media specialists	1		1		2
Parents	2				2
Chambers of commerce			2		2
Teacher			1		1
Labor market analyst, ODJFS				1	1
Total	9	5	7	5	26

The focus groups were conducted on these date at locations that minimized the travel required for those who were invited:

- Northeast, December 10, 2002, Silver Lake Country Club, Silver Lake
- Southeast, December 17, 2002, Eastland Career Center, Groveport
- Southwest, January 8, 2003, Franklin High School, Franklin
- Northwest, January 9, 2003, Millstream Career Technical Center, Findlay

CHAPTER 3

INTERNET ACCESS FROM OTHER intoCAREERS STATES

Ohio is one of 15 states that purchases Career Information Systems (CIS) software and services from intoCAREERS, a unit of the University of Oregon. Each state enters into an agreement for an operating license that allows it to distribute CDs and issue usernames and passwords for Internet access to all applicants that meet its criteria. Thirteen of the other states were contacted by telephone to determine their procedures for providing Internet access and how they fund their state systems. A summary of these interviews follows. The basic information from each state, including the name of the state representative interviewed, is presented in Appendix C. (The state director not interviewed was from Oklahoma, which had just jointed the intoCAREERS network. The CIS director did not respond to e-mails requesting an interview.)

The CIS of all states of the intoCAREERS network are available via the Internet, but the ease of access varies. Indiana's CIS can be used by any visitor to its website. In Illinois, Massachusetts, and Nevada, residents can obtain usernames and passwords from their CIS websites. In all the other states, usernames and passwords are provided by the entities (schools, libraries, etc.) that purchase or are issued site licenses.

Internet Access

Indiana has completely open access to anyone who visits its website. It has done so since 1999. It first made its Internet version available in 1997. From that year until 1999, Indiana required visitors to enter a username and password to access its CIS. It found that when asked to enter this information, 90 percent of visitors did not do so. During the period Indiana required usernames and passwords, its CIS averaged about 5,000 unique user sessions a month. When it dropped this requirement, usage quickly jumped to 25,000 unique sessions and in recent months usage has been averaging about 100,000 sessions.

To provide open access, Indiana had to renegotiate some of the requirements of its licensing agreement with intoCAREERS and to develop its own searching and sorting software. This software matches colleges and occupations with information users enter about their interests and preferences.

Illinois and Massachusetts require usernames and passwords to access the Internet version of their CISs, but they make it very easy to obtain

this information. Illinois provides general public access for all residents who enter valid ZIP codes. The first page that appears asks visitors to enter their username and password. If users do not have this information, they are instructed to "Click Here" which links them with a page where they select a state from a drop-down box and enter a ZIP code in a second box. If the ZIP is from Illinois, a page appears with a username and password and a link back to the sign-in page. In Massachusetts, access is limited to those who can provide a valid ZIP code for cities and towns listed on a drop-down box on the home page.

Nevada also makes it easy for their residents to obtain usernames and passwords, but the process is not programmed into the webpage software. The home webpage of the Nevada CIS has a link to its Internet version prominently displayed in the upper right hand side of the screen. Beneath the link there is the following message:

> Nevada Residents Can Now Use NCIS on the Internet for no fee. To Get Your USERNAME & PASSWORD, submit an E-mail with your name and Nevada address.

A click on "E-mail" in this message links to the e-mail program on the user's computer and enters the address to which the user's name and address should be sent. A staff member responds to each e-mail received by issuing the same username and password.

For those who do not have usernames and passwords, Nevada and Washington list on their websites licensed locations where the public may be able to access the CIS for those states.

Funding

In those state that sell site licenses, the fees vary widely. Most states that charge fees vary the amount depending upon the number of students or clients that will use the system. Small schools and agencies pay less. The lowest fee reported, $150, was in Georgia and the highest, $1,400, was in Washington. These are the fees charged per site and discounts or caps are available in some states for large users. Georgia, for example, caps its fees at $15,000 per purchaser. The average minimum fee in the seven states for which data were available was $522. The average maximum was $1,068.

Views of the appropriateness of licenses fees also vary widely. The states that do not charge believe that information that is developed by the state should be available to all its residents. Some of the states that are funded primarily on site fees are strong advocates of this approach. They feel it provides a degree of certainty that eliminates the need to lobby to

retain funding each time a new state budget is developed. One state CIS director said that she believes a fee "enhances the credibility of the product." People tend to perceive something they pay for as more valuable than something they get free.

On one issue involving Internet access there is unanimity: Internet usage causes fewer, not more, requests for customer service. The installation of CIS on users' computers from CDs leads to more problems than Internet access. Nevada is so convinced of the superiority of the Internet that it will no longer distribute CDs after 2003. The only problem reported for Internet access is slow downloading for those using modems and telephone lines to connect to the Internet.

It should be noted that even though there are fewer requests for customer service from Internet users, if easier access led to a major increase in users, the absolute number of requests could still increase. For example, assume that the number of requests for service from CD users is 3 per 1,000 and the number from Internet users is 1 per 1,000. A five fold increase in Internet usage, such as experienced by Indiana, would still yield an absolute increase in requests for service.

CHAPTER 4

TECHNICAL PANEL CONFERENCE CALL

What are the implications for server and transmission capacity of a major increase in Internet access to the Ohio Career Information System (OCIS)? This question was the focus of a conference call conducted on January 30, 2003 with three individuals who manage on-line information systems:

- Duane Baker, Chief Technology Officer, Northwest Ohio Computer Association (NWOCA)
- Charles Schmiesing, User Liaison/Programmer, INFOhio Technical Services, Northwest Ohio Area Computer Services Cooperative
- Dave Smith, Director Programming, NWOCA

Andrew Tompkins, Chief Technology Officer, Management Council of the Ohio Education Computer Network, had been scheduled to participate in the conference call but a last minute conflict prevented him from doing so. He reviewed this report of the call and had no additional comments.

Duane Baker and Dave Smith currently manage the OCIS server. The reason they do so was explained in an e-mail from Mr. Smith:

> We do it now more for historical reasons than anything else. In the past, we were involved because we helped distribute the old 'mainframe' version. Later we helped distribute the username/ passwords to the OECN DA [Ohio Education Computer Network Data Acquisition] sites for the web version.

The questions in parentheses below were sent to the panel prior to the conference call. Mr. Smith provided written responses that were circulated to the others. The conference call consisted primarily of further explanation of the written responses. As in the summary of the focus groups, the following is not a verbatim transcript. Instead it presents the main topics discussed during the conference call. Quotes are used when they emphasize key points.

Would one server continue to be adequate or should there be more than one?

It was noted that Indiana first made its career information system available over the Internet in 1997 and required usernames and passwords. The state found that when asked to enter this information, 90 percent of users did not do so. In 1999, this requirement was dropped

and usage increased from 5,000 to 25,000 users per month. The Indiana system currently is averaging about 100,000 users per month.

With this as background, the panelists were asked if the current server would be adequate if Ohio experienced a similar increase in usage. It was noted that OCIS does not currently have its own server. The server that it runs on is owned by the state software development team and provided without cost to OCIS as a service to the Department of Education. If additional capacity is needed, Duane Baker feels sure it will be provided.

The current server has two central processing units (CPU) and could accept two more. At current peak usage, about 30 percent of the server's capacity is needed. More typically only 5 to 10 percent is used. "It is basically bored." It could handle a five-fold increase with little problem. In addition, if there is increased usage of OCIS by the general public, this is most likely to occur in the evenings and on weekends when students will not be accessing it from schools. The panel anticipates no immediate capacity problems even if general Internet access produced a five-fold increase in usage.

The University of Oregon holds the copyright to the software system that underlies OCIS. It is Duane Baker's understanding that authentication of usernames/passwords is provided by a computer at the University of Oregon. This computer should be able to provide information on the number of unique users. The number of users, however, is not a good measure of the load put on a server. A user could connect and make only one request while a second user "could sit there all day making requests." The number of users tells how many people are being served, but it is a poor indicator of the capacity needed to provide service.

The downloading of occupational videos has much more serious implications for server and transmission capacity than the absolute numbers of users. Storing and transmitting videos requires much more system capacity than text.

Recent usage. A review of usage statistics for the first two months of 2003 confirms the panel's assessment that current usage is predominantly during school hours. The primary usage statistics that OCIS tracks are requests and requests for pages. In a personal communication, dated March 6, 2003, Dave Smith defined these measures as follows:

> "Requests" are any requests to the server for a resource, including images. "Requests for pages" are requests for resources that the log analyzer considers to be a "page." These include "html, asp," etc. This is equivalent, in most cases, to what people think of as a "web

page," but any page may have images on it that require additional requests to the server to resolve.

For example, a request for a page that contains 10 jpeg images will result in 11 "requests." one for the page and 10 for the images. But this is all very imprecise because the browser may not request the image if it has them in its cache.

The "requests for pages" give you a better idea how pages are being viewed "Requests" tells you how many files are being downloaded and bandwidth requirements.

During the first two months of 2003, the number of requests for pages on Sunday and Saturday averaged 3,466 per day. The number of requests for pages on Monday through Friday averaged 28,919 per day. The number of requests was thus over eight times higher on weekdays than on the weekend.

Further analysis indicates that these requests occur primarily during school hours. Table 3 presents the average number of requests for pages by hours during the two-month period.

Table 3
Average Number of Requests for Pages by Hour
During January and February 2003

Time Period	Pages per Hour
12:00 to 6:59 a.m.	16
7:00 to 7:59 a.m.	539
8:00 a.m. to 2:59 p.m.	2,565
3:00 to 3:59 p.m.	454
4:00 to 9:59 p.m.	435
10:00 to 10:59 p.m.	241
11:00 to 11:59 p.m.	104

These figures show that over 80 percent of usage occurs during the 8:00 a.m. to 3:00 p.m. period. These averages include weekends, when usage is much lower, so the usage during these hours on weekdays is actually higher.

The number of logins from October 15, 2002 through the first week of March 2003 was about 105,000. Once visitors access the system, they

may look at one, two or dozens of pages. As noted above, the number of pages requested is thus a better measure of system usage than is the number of logins. In the first two months of 2003, requests for pages per day averaged 22,017

These figures can be used to make rough estimates of number of logins per day and the number of requests for pages per login. The period for which login data are available includes 21 weeks, or 147 days. Information presented above, indicates that Internet usage occurs primarily during the school week. Subtracting weekends, holidays, and assuming three snow days, there were 90 school days during this period. Dividing the number of logins, 105,000, by the total number of school days yields approximately 1,200 logins per day. Dividing the average number of pages requested per day (22,017) by the average number of logins yields an average of 18 pages requested per login.

What office or agency should assume responsibility for updates, problem resolution, and maintenance?

If OCIS were made generally available via the Internet, it would be advisable for those currently managing the system to continue to do so. They have the knowledge and experience to deal with any technical problems that a large increase in usage may cause. The computer for OCIS is located at the State of Ohio Computer Center to provide the best connectivity. All school districts in the state are linked in what is essentially a state-wide intranet.

Before general Internet availability to OCIS is offered, the panel recommends that it be put behind a firewall and more resources be "locked down." There is minimal threat at present because relatively few know the URL or have the information needed for access.

The information technology division does not provide user support. That is currently provided by the OCIS office. With general Internet access, the number of users needing assistance is likely to increase markedly. Two primary suggestions for providing user support arose in the focus groups conducted with current users: referring users with questions to their local school districts and/or libraries, especially to the "Ask a librarian" service. The panel was asked their assessment of feasibility of these sources providing first-tier user support.

INFOhio and the Ohio Public Libraries Information Network (OPLIN) have in place procedures for dealing with problems encountered by the users of their services. Expanding these procedures through training in OCIS is a possibility. Libraries have the advantage of being available evenings

and weekends when most adult users are likely to access OCIS over the Internet.

The cuts in state funding that libraries have experience may make them more or less willing to assume this responsibility. They may welcome another opportunity to demonstrate how they serve taxpayers, or they may not be able to provide any additional services.

The panel repeated the recommendations that had come out of the focus groups that a list of frequently asked questions and other aids to navigation be added to the site. These could include pop-up suggestions and a tutorial. Another option is to sell a CD complete with tutorial and occupational videos for those users who want to avoid the problems, such as slow downloads, that may accompany Internet access.

If OCIS is to be offered to all residents of Ohio on the Internet, what type of identification could be required to verify that those requesting access are actual residents?

To open the discussion of this question, the methods used by Illinois and Nevada to issue usernames and passwords, as presented in Chapter 3 (page 12), were described.

OPLIN and INFOhio also must limit access to restricted databases. OPLIN requires users to enter their library card number and to select from a dropdown box the library that issued that card. INFOhio uses two methods: it registers the IP [Internet Protocol] address of school computers, and for computers without registered addresses, it prompts for username and password, which are distributed by region. Any user who accessed OCIS from these two sources could be authenticated as an Ohio resident using these established procedures.

For user who access OCIS directly from their own computers, it would be possible to use one of the commercially available passport systems. This approach, however, could become quite costly with increased usage of OCIS. The consensus of the panel is that the method used by Illinois would be the quickest and least expensive alternative.

CHAPTER 5

DISCUSSION AND RECOMMENDATIONS

There was wide support for increased Internet access to the Ohio Career Information System (OCIS) across all sources contacted for this study. Although private sector involvement in the data collection was limited, the representatives of two chambers of commerce who participated in the southwest focus groups were among the strongest advocates of making Internet access available to all residents of the state. This chapter summarizes anticipated benefits and the factors that will need to be addressed if the decision is made to expand access. It concludes with recommendations for next steps

Anticipated Benefits

There was a consensus in all four focus groups that those most likely to benefit from general Internet access to OCIS are adults considering or making career transitions. If OCIS were easily available from personal computers, and the type of information it can provide were widely publicized, many adults who have to change jobs, or would like to do so, could use it to explore their options. Most young adults have been exposed to OCIS while in school, and they are the members of the workforce most likely to make career changes. The years following the completion of formal schooling are characterized by many jobs changes as young adults seek the best match between their aspirations and the realities of the labor market. OCIS could be a useful resource during this period.

For many high school graduates, the first year or two of college is a time of career exploration as they experience varying levels of success and interest across their courses. Their success, or lack of it, influences their preferences for occupations that align with these courses. About half of those who originally choose science and engineering majors, for example, find these courses too difficult and switch to other majors (Pearson and Fechter 1994). Making such changes requires a reassessment of career plans. As Table 1 indicated, OCIS is far less available in postsecondary institutions than in high schools. General Internet access would fill a partial void at this level.

Parents of current students were frequently mentioned as likely to benefit. At present, about half of the parents of students who access OCIS could also do so by entering usernames and passwords issued to

their students. The other half cannot because their students attend schools that have only the CD version.

Students who are home schooled and who attend charter schools will also benefit if broader Internet access were available. At present, the only access home-schooled and most charter school students have is through public libraries that purchase site licenses. It seems highly probable that most parents providing home schooling know nothing about OCIS. Some charter schools do purchase site licenses, but the number is not large. Easy Internet access to OCIS, coupled with a campaign to publicize its content and availability, would make this resource available to many who currently are unaware it exists.

This discussion has focused on the types of individuals who would benefit directly from general Internet access to OCIS. These direct personal benefits would have wider societal effects as individuals make better informed career plans and decisions. It would be virtually impossible to make a direct causal link between use of OCIS and greater job satisfaction, higher earnings, or increased productivity. Too many other factors influence such outcomes to ever detect the separate, independent effect of career information. There is, however, an extensive research base on career development. This evidence makes a strong case that individuals who follow careers that are a good match for their interests and abilities are more satisfied and successful (Herr and Cramer 1996, Isaacson and Brown 2000, Osipow and Fitzgerald 1996). Good information about one's interests and aptitudes and how these align with possible occupations are essential to the development of a sound career plan.

The advisory group for the study noted that general Internet access to OCIS would encourage interagency cooperation that would provide two additional benefits. First, it would act to prevent duplication of effort, and second, it would push toward standardization across agencies. To the extent that access to OCIS is limited, agencies may act to make similar content available through other means to their clients. The Clermont County one-stop center is a good example. This one-stop is operated by a private, for-profit company, and state law prevents the sale of site license for OCIS to such companies. To provide similar content, the company that operates the one stop purchased SIGI PLUS®, from Educational Testing Service.

The advisory group also thought that open access to OCIS would focus the need for standardization of definitions and reporting methods for educational, training, and occupational information. At present, separate state entities, such as the Governor's Workforce Policy Board and the Board of Regents, are working toward Internet portals designed to

provide information on career and job opportunities. Both of these will draw upon information assembled by the Labor Market Information Bureau of ODJFS, and the expanded job listings that this department is developing. All of these initiatives would benefit from standardization of definitions that build on OCIS as a key component.

If Enhanced Internet Access is Implemented

Since OCIS is already available on the Internet, moving to wider access would be fairly straightforward, once the funding question is decided. This section examines funding and other issues that should be considered in making the decision to enhance Internet access.

Funding the system. At present, about half the funds for OCIS come from the sale of site licenses and half from the state budget appropriations for the Department of Education. The budget requested by the Department for OCIS had a line item of $5,000,000 to cover all the expenses of enhanced access to OCIS. This amount covered marketing, adding and re-formatting content to better serve adult users, and expanded training and customer service. It allows for the creation of a telephone hotline, similar to the service provided by the Indiana CIS office, to answer user questions and provide materials to those who cannot download from the Internet.

The budget that Governor Taft submitted to the Legislature included a request for $900,000 for OCIS. If this amount were approved, a big "if" in the economic climate prevailing during the spring of 2003, it would cover only current expenses, not the additional activities that would be needed to maximize usage.

Of the 13 states in the intoCAREERS network that were interviewed, five of them provide their CIS without cost to users, and the other eight sell site licenses. The states that do not charge feel that the information in their systems should be available to all residents. The states that sell licenses argue that these funds provide a stable base and eliminate the uncertainty of the state budgeting process. The current financial crises that virtually all states are experiencing reinforce this position.

As was noted in Chapter 3, some of the state directors also believe that requiring users to purchase their CIS increases the perceived value of the product. A guidance counselor in one of the focus groups made a similar comment. He said that many of the counselors in his school do not use OCIS. They see it as a "stepchild" and prefer similar but more expensive systems sold by private companies.

If the Legislature does not approve the Governor's budget request for OCIS, it may be possible to obtain some funding from other state agencies whose clients use the system. A representative of the Department of Job and Family Services has indicated that his department may have some funds available from the Workforce Investment Act that could be used to test wider Internet availability. There is no assurance, however, that funds from this source would be available beyond the current fiscal year.

Customer service. If general Internet access became available, it is likely that requests for customer service would also increase. The other state CIS directors all agree that those who access OCIS by the Internet have fewer requests for service than do CD users. Nevertheless, if there were a major increase in Internet access, the number of requests would increase even if these requests come from a small proportion of all users.

More extensive introductory material on the home page and "as needed" pop-up guides may prevent some requests for service. The CD version provides more of this type of assistance than the Internet version. There is, for example, a list of Frequently Asked Questions (FAQ) on the Internet, but it is necessary to click on "Help" to find it. In the CD version there is a FAQ tab prominently displayed. An overview or flowchart showing how the several components interrelate would also be useful to a new user.

As was discussed in Chapter 2, if personal service is needed, the focus group participants suggested local school districts and librarians as potential sources. Some members of the advisory group, however, were skeptical that all guidance counselors would be as receptive to providing this service as were those in the focus groups. Another possible source suggested by the advisory group is the career coordinator network. These coordinators are very familiar with and supportive of OCIS, and they have contact with every school district in the state.

The advantage of librarians is that they are available in the evening and on weekends when most adults are likely to access OCIS via the Internet. If librarians are willing to provide such assistance, manuals and training would be needed to prepare them.

A draft of this report was sent to the State Librarian, Michael Lewis, for his comments. In a personal communication dated April 29, 2003, he noted the wide range in the size and scope of services of the 250 public library systems in the state:

> You will find some public libraries that are fully capable of handling OCIS now with limited training. In some of the smaller libraries, especially those that are one or two or three person operations, training could be a substantial issue.
>
> For public library access, OPLIN is the key. For OCIS to be used successfully through OPLIN, training at the local level will be the key. Of course, the use of any resource available through any library network, such as OPLIN, hinges almost solely on sufficient training in the use of that resource.

Career coordinators would not need such preparation. Methods of referring inquiries to either the librarians or coordinators would need to be developed. This could take the form of software that would link postal ZIP codes with libraries and school districts serving those codes.

Publicize availability. Methods of publicizing general Internet access were also discussed in the focus groups and the main suggestions presented in Chapter 2. The primary recommendation was to focus publicity on those preparing for careers or in career transition. Posters were mentioned in each group. These could be widely distributed to postsecondary institutions, county Departments of Job and Family Services, libraries, and private social service agencies, such as Urban League, Salvation Army, and YM, YWCA. Illinois used this method when it made its CIS more available. All those to whom the posters were originally sent were encouraged to request more copies if they needed them and many did so. Illinois also distributed bookmarks with the URL and list of its CIS components. When contacted, Massachusetts had just made open Internet access available and was just beginning to publicize the URL. Its initial effort will be a mailer sent to all school counselors and librarians describing the information in its CIS and giving direction for access.

It warrants repeating that general Internet access will be of little benefit to those who do not have personal computers unless a major effort is made to publicize its availability at sites where such individuals can use computers. The focus groups recommended that efforts be made to get announcements of Internet access in the newsletters of organizations that serve low-income individuals. One especially appropriate resource is the Ohio Community Computer Network that has as its mission the development and support of computer centers in low-income neighborhoods. The website of this network lists 31 current centers as members (URL: http://www.occcn.org). List of other such organizations could be easily developed using Internet search engines, such as Google©. A search conducted on March 12, 2003, for example, using the

words "homeless, organizations, Ohio" yielded a website with a list of Ohio organizations serving the homeless at this URL: http://www.nationalhomeless.org/local/ohio.html.

Adequacy of technology. It is the judgment of the technical panel that the current server and transmission network could accommodate a five-fold increase in OCIS access via the Internet with little problem. The analysis of current usage presented in Chapter 4 indicates that over 80 percent of current usage occurs during school hours, 8:00 a.m. to 3:00 p.m., times when adult are less likely to access OCIS. The panel recommended that if OCIS becomes generally available, the system be placed behind a firewall and additional resources be "locked down."

Some of the counselors who participated in the focus groups indicated that even if Internet access to OCIS became available without the need to purchase site licenses, their schools would still want the CD version. Schools can load this version on their computers and thus avoid having students who are using OCIS tie up much of their schools' capacity to link to the Internet.

Recommendations

1. The Ohio Career Information System (OCIS) should be made generally available over the Internet to residents of the state.

2. A method to validate residence in Ohio, similar to that used by Illinois, should be adopted.

   Illinois users are asked to enter the ZIP codes for their homes. If valid ZIP codes are entered, a username and password are automatically provided to the users.

3. Additional protection (firewalls) against entry into the OCIS operating software by hackers should be added to the server.

4. General Internet access to OCIS should be widely publicized focusing primarily on individuals preparing for or making career changes.

   Availability and awareness is generally good in middle and high schools. Consequently, the publicity campaign should focus on postsecondary, institutions, libraries and public and private agencies serving adults in career transition. A special effort should be made to inform organizations that provide computer access to individuals who do not have computers in their homes.

5. OCIS should be added to the resources available through INFOhio and OPLIN.

6. The Office of Career-Technical and Adult Education should explore with the State Library of Ohio the feasibility of recruiting librarians to provide first-level customer service to OCIS users. The career coordinator network is another potential source of such service that should be examined.

A Final Note

All of the findings, analysis, and recommendations presented in this report could become moot if a bill introduced in the current session of the Ohio General Assembly (HB 145) is enacted (Theis 2003). This bill would prevent government agencies from putting information on their websites if there are two or more private sources of the same information.

The bill outlines a procedure by which an agency can obtain approval to provide what the bill refers to as "duplicative or competing electronic commerce services" (Sec. 1306.28), but this procedure involves extensive public input, cost analyses, and justification. If HB 145 becomes law, providing general Internet access to OCIS to all residents of Ohio would become very difficult to achieve[1].

[1] The author wishes to thank Duane Baker, Chief Technology Officer, Northwest Ohio Computer Association, and a member of the technical panel for the study, for alerting him to this bill.

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ACRONYMS USED IN THIS REPORT

CDJFS	County Department of Job and Family Services, a department of county government in all 88 counties of the state responsible for providing career opportunities for all residents and financial and other support to those in need
CIS	Career Information System, a generic term. Systems with information specific to a state typically have the initial of that state, e.g., OCIS = Ohio Career Information System
DA Sites	Data Acquisition Sites, 23 regional sites that provide technology services to their member districts
INFOhio	Information Network for Ohio School, a partner in Ohio's library network to ensure the free delivery, quality, format, and equity of information via the Internet for learners and educators.
IP Address	Internet Protocol address, a numeric address that uniquely identifies a particular computer on the Internet
MCOECN	Management Council of the Ohio Education Computer Network, a membership organization that supports planning, promoting, facilitating and operating effective and efficient information technology-related services for the PK-12 learning community in Ohio
OCIS	Ohio Career Information System
OECN	Ohio Education Computer Network, the technology arm of the Ohio Department of Education, funded through local school districts. The network is made up of the 23 DA sites
NWOCA	Northwest Ohio Computer Association, one of the 23 DA sites. This site has managed OCIS to date
ODE	Ohio Department of Education, the department in which the office responsible for OCIS is located
ODJFS	Ohio Department of Job and Family Services, the department that provides state leadership to the county departments that operate one-stop job centers where OCIS is used

OPLIN	Ohio Public Libraries Information Network, a service offered through local public libraries to provide the residents of Ohio with access to the Internet and various proprietary databases
RSC	Rehabilitation Services Commission, the state agency responsible for providing services to enhance the employment opportunities of individuals with disabilities
SLO	State Library of Ohio, serves as a resource for residents, a depository for federal and state documents, and as a leader and coordinator of library networks in the state
URL	Uniform (sometimes Universal) Resource Locator, the electronic address for a resource (web page) on the Internet. More technically, a character string describing the location and access method of a resource

APPENDIX A

ADVISORY GROUP MEMBERS

Name	Position	Organization
Dick Arndt	Director K-16 Initiatives	Ohio Board of Regents
Keith Ewald	Director, Labor Market Information	Ohio Department of Job and Family Services
Theresa M. Fredericka	Executive Director	INFOhio
Cynthia R. Gahris	Assistant Director	Ohio Department of Education
Joel Husenits	Managing Editor	Ohio Public Libraries Information Network
Joanna Hart McNally	Vice-President	Ohio Educational Library Media Association
Susan K. Sears	Board Member	Ohio School Counselors Association
Barbara Sprague	Executive Director	Ohio PTA
James M. Utendorf	Consultant	Ohio Department of Education

APPENDIX B

REPORTS OF THE SEPARATE FOCUS GROUPS

The focus groups were held during December 2002 and January 2003 at locations in the four quarters of the state that were selected to minimize travel time for the participants. Each of the focus groups began with the participants listed at the end of each summary introducing themselves and the way they use the Ohio Career Information System (OCIS) in their work. After the introductions, the groups discussed the questions in italics below.

Most of the following text represents summaries of the participants' comments, not a verbatim transcript of the discussions. Comments that reflect the prevailing tone of a discussion or underscore pertinent points are quoted directly, either as indented paragraphs or in quotation marks.

The questions shown in italics were not asked in the same sequence in all focus groups. They were introduced in the discussion at the point judged most appropriate by the facilitator. If, for example, the group began discussing public libraries as an access point for OCIS, the facilitator encouraged further discussion of that topic when it arose naturally.

To conclude each session, the facilitator asked the participants to make "one wish" concerning OCIS. If they could ask for one thing that was certain to be implemented, what would they wish for? Some comments made at different points in the discussion did not fit naturally under any of pre-set questions. These are presented at the end of each summary under "Other Comments."

Northeast Ohio, December 10, 2002
Silver Lake Country Club, Silver Lake, Ohio

This session had nine participants: three guidance counselors, two parents, a librarian/media specialist, a Rehabilitation Services Commission counselor, a career coordinator, and a workforce development specialist.

Do you see a need to have OCIS available via the Internet so any resident of Ohio could use it without cost?

There was general agreement that free Internet access would be beneficial to many groups who currently have limited or no opportunity to use OCIS. Parents were most frequently mentioned. The guidance counselors in the group felt it would be helpful for parents to be able to access OCIS together with their students. They saw this as a natural follow up after the students had received an orientation to the use of the system. The media specialist and one of the guidance counselors noted that their schools already have access to the Internet version of OCIS, and they provide the access information so students and their parents can use it from their home computers

Although the PTA representatives had no prior experience with OCIS, they saw the potential that Internet access has for making career exploration and planning a family activity. One commented on the limited feedback that her own children provide on their school activities, and saw Internet access as encouraging an enhanced partnership with the schools.

One of the counselor reported that his school asks parents to attend an orientation workshop on OCIS in the evening. "It does make a big difference. The response I get from the kids after that [the parents attending the workshops] is overwhelming."

The media specialist in the group noted the usefulness to parents seeking financial aid for postsecondary education:

> I can't say enough about the product [OCIS]. I think it is really important especially in low-wealth districts, which we are, that you have something that helps parents who are looking for financial aid. I have a lot of interest from parents for that aspect as well as those seeking re-employment, who are unemployed or seeking employment in other areas, and we have a lot of those. I am really excited [about free Internet access to OCIS].

The workforce development representative added that OCIS compliments the various occupational information and job seeking databases that the state is seeking to make available through the Internet.

A counselor noted the importance of having OCIS available when students are ready to use the information it contains. Many schools teach students to use OCIS in middle school. Often when students initially learn about the system, they have not reached the point in the career development where they have a real interest in using it. "When they are ready to get on the career train, whether it is in 8th, or 9th or 12th grade, they would have the tool available."

The Rehabilitation Service's representative endorsed Internet available as a way of making information more available to the clients of that agency. At present, after clients have done research on training sites or occupations, the information is printed out and mailed to them. With the Internet, the clients could access the same information directly.

The media specialist suggested that OCIS be linked to INFOhio, (Information Network for Ohio Schools, http://www.infohio.org) a web site that makes electronic resources, such as encyclopedias, magazines and newspapers, available to schools.

What groups have least access at present?

Economically disadvantaged people who do not have a home computer or use a public library can currently access OCIS through resource rooms at one-stop centers operated by county department of Job and Family Services.

A major barrier to some potential users could be language. The question was raised if OCIS is available in any language other than English. No one in the group was sure of the answer, but the sense was it was only in English.

A barrier for some students is the amount of reading that is currently required. One counselor said he would like to see the videos that are part of the CD version made available on the Internet. He recognizes that bandwidth becomes a consideration, but he would still like to have the videos available. [Videos have always been available over the Internet version. This counselor has either not tried to access them or has transmission problems at his school.]

Another counselor added that he thinks students need orientation, "They cannot just be turned loose on the [WorldWide] Web."

This led the facilitator to follow up with the next of the predetermined questions:

Do you think a person who has no experience with OCIS could use it over the Internet without assistance?

This led to a variety of responses. Some concerned the basic design of components of OCIS and others were specific comments about layout or features.

The assessment products stimulated considerable discussion. One participant said that when she does the occupational sort she never gets an occupation.

> By the time I have made all the choices, I'm always at zero. Even when I tell the kids to ignore salary, it is really difficult, because they don't realize how one response negates another. I think even an adult who didn't know the game would be frustrated with that portion of it.

To deal with this problem, it was suggested that the present explanation of how the sorting process works be expanded with a PowerPoint demonstration or site map that explains the sorting in more detail. One person mentioned that a previous version of OCIS had a ball that shrunk each time a question was answered. This gave immediate feedback on the effect of an answer. She felt this was helpful and should be included in the present version.

If a sort does produce a list of occupations, often students reject all those listed. The counselor who mentioned this says she encourages her students to click the related occupations to see if there is not something of interest.

One of the specific comments was the size and location of the stop buttons. The person making this comment said they are too small and too close together. He recommended they be made easier to use.

A consensus emerged that a naïve user would probably have some difficulty and the version of OCIS made available via the Internet should have a tutorial and help menus at points where new users are likely to get stuck. The caution was raised that online aids should be targeted with specific steps to take: "Be careful that you do not get caught up with verbage. Do this. If this happens, do this."

Assistance beyond the website, itself, could be provided by schools. At one high school represented in the group, the students are required to provide a set number of hours of community service. One way they can satisfy this requirement is by assisting residents to use computers. The students are trained to offer this service, and this reduces the demands on the time of school staff.

One participant noted that there are really two levels of training needed. The first is similar to that currently conducted by OCIS staff for counselors and others who assist their clients to use OCIS. The second level is now provided directly to users by those who receive the first-level

training. If OCIS is available to the general public, there will be a need for more individuals to play the intermediary role.

The training provided by OCIS staff was described as very good. No matter how well the trainee understands the content of the training, however, there is always some loss when the trainee actual uses OCIS.

Libraries were cited as a possible source of assistance. Almost all libraries have reference staff who will respond to requests for specific information. (A Google© search on December 26, 2002 with the words "Ask a Librarian" yielded 380,000 web addresses.) It was suggested that the librarians who respond to inquiries be trained to answer the questions asked most frequently about OCIS.

Another issue raised was the impact of slow transmission. If a user does not have a high-speed connection to the Internet, will navigation across the different components of OCIS be so slow that a user becomes frustrated and gives up? It is likely that most home users would have a dial-up, not a high-speed, connection. Is a dial-up sufficient to be able to use OCIS in a manner that will be satisfactory to the average user?

If OCIS were available to all residents on the Internet, what would be the best ways to inform potential users about it?

The media specialist repeated her recommendation that OCIS be bundled with existing electronic resources of the state, such as INFOhio and OPLIN (Ohio Public Library Information Network, http://www.oplin.lib.oh.us). Links would automatically make OCIS available to all users of these resources.

The Rehabilitation Services representative said her agency had received "register-to-vote" posters before the last election. She suggested similar posters about OCIS availability be prepared and distributed to all state agencies that have high contact with residents, such as Job and Family Services and the Bureau of Motor Vehicles.

It was noted that OCIS staff has had experience in distributing posters to schools. The posters had cards attached that potential users could take with them. These cards directed users to different parts of the system in which they may be interested. Previous awareness activities could provide guidance to future initiatives.

Another suggestion was to ask school websites to publicize OCIS availability. One counselor reported that his school has a banner for FAFSA (Free Application for Federal Student Aid,

http://www.fafsa.ed.gov), on its website and that "gets a lot of hits." A video for use by public access channels was another idea.

Education associations and educational programs offered by religious groups could be additional methods of publicizing OCIS. Associations that hold annual conferences are always looking for workshops for their members. Presentations on OCIS would be a natural for such meetings. The newsletters and journals of these associations offer additional ways of informing their members. Short descriptions of the main features of OCIS could be prepared and distributed for possible inclusion in these publications.

Many religious communities have after-school programs that provide tutoring. Information could be sent to the state-level officials of these programs and these officials could distribute it thought their channels. Retired teacher associations were also mentioned as having potential, because retired teachers often get questions from former students about educational opportunities.

Will having OCIS available to all residents via the Internet cause any problems for those who now provide access?

The Rehabilitation Services representative saw unrealistic occupational goals as a potential problem. All of her clients have some type of disability, and many times they choose goals that are cognitively or physically inappropriate. She was not sure this represents an additional burden for it occurs commonly with her clients.

The workforce development representative said unrealistic goals were also a problem with the clientele his agency serves. The counselors who work with these clients are usually able to help them set more attainable goals. The typical client of his agency did very little career planning while in high school. Those who are changing careers have more knowledge of the work world and not as difficult to assist in planning.

The point was made that OCIS is just a tool; it cannot solve all the problems of career planning. The Rehabilitation Service does considerable psychological and career assessment before OCIS is introduced. An attempt is made to limit the range of potential careers before searching for specific occupations.

The kinds of problems that users who lack prior exposure to OCIS will encounter are likely to depend on their reasons for using it. If users are just seeking directional information, such as training programs and names and addresses, they probably will not have many problems. The

assessment part can be much more confusing. A flowchart that directs users to different parts of OCIS would be helpful. Links to trained resources, such as the librarians mentioned above or counselors at schools, neighborhood family service and one-stop centers, could also be included.

It was suggested that the system could have different means of authentication depending on the locations from which OCIS was accessed. There could be different screens for schools, libraries and home access which would list different additional resources. The opening screens for schools and libraries would be different than those for home users.

One option would be to make public libraries the site for expanded Internet access. How effective do you think this approach would be?

Most comments identified negative aspects of limiting public access to libraries. The participants in this group would prefer to have Internet access to OCIS from homes. Even if it is available to homes, however, those from low income families may not have computers or linkage to the Internet so libraries or neighborhood centers may be their own access. Even library access may not be available to some potential users who do not have a library card because of damage to borrowed materials, unpaid fines, or prior abuse of Internet usage.

If OCIS is to be offered to all residents of Ohio on the Internet, what type of identification could be required to verify that those requesting access are actual residents?

Suggested means of verification included having individuals enter their ZIP codes and/or full addresses, phone numbers, or the numbers on driver licenses, state IDs, or library cards. Each method has some drawbacks. On ZIP codes, for example, residents of another state could easily obtain an Ohio code to enter. A small number of people do not have telephones, driver licenses, IDs, or library cards. No method is foolproof.

One Wish for OCIS

As noted in the introduction, to conclude each focus group, the facilitator asked the participants to think of one thing about OCIS they would most like to see become a reality. The following "wishes" were expressed:

- ✓ Continue to make OCIS available as a site license to the schools. Make the Internet version available to all libraries and survey to see how many people would like to have it available in their homes.
- ✓ Publicity is crucial. The more information about it is out there, the more people will use it.
- ✓ The more accessible it is in many places, the more people will use it. The schools are already using OCIS.
- ✓ Promote OCIS as a life-long tool. The target is still the schools, but adults should know it is available.
- ✓ The library option doesn't sound bad to me. I don't know if needs to be in everybody's house because of technology and related issues. For Rehabilitation Service clients making a trip to the library can be part of preparing for a career.
- ✓ Most people access sites through a web browser and often many of the sites they find are garbage. OCIS is a very safe product and by guiding people to it we are providing a service.
- ✓ OCIS would be free to all students in a school system.
- ✓ The library approach is a good idea, but you could put it out there for general availability and monitor the usage to see if people are using it from homes.
- ✓ Improve the credibility of the product. The career searches that my children did while they were in school have no relationship to what they study when they are in college.

Other Comments

The following comments arose at different point in the discussion, but did not fit within the responses to the questions presented above.

One counselor reported that the Oregon group that coordinates the 14 state consortium is very unresponsive to user needs. He said that his school had a problem with the IDEAS component of OCIS and called Oregon about 40 times trying to get help. None of their calls were returned.

Even if open Internet access to OCIS becomes a reality, one counselor thought schools would probably continue to prefer a version they can put on their own computer. Internet usage would tie up too much of the transmission bandwidth available to the schools.

In a setting where multiple OCIS users are sending pages to be printed to the same printer, the Internet version does not identify the user. It was suggested that a name be entered and this be used to identify any pages that are printed.

Participants

Name	Representing	City
Barbara Bungard	Ohio PTA	Stow
Marge Ford	Campbell Memorial High School	Campbell
Beverly Hawley	Ohio PTA	Cuyahoga Falls
Karen Kriss	Rehabilitation Services Commission.	Akron
Mike Longo	Workforce Development, Cuyahoga County	Cleveland
Rodger Smith	Geneva High School	Geneva
Dorothy Sutton	Career Coordinator, Ohio Department of Education	Lisbon
Steve Titchenal	Taylor Academy	Cleveland Hts.
Nancy Willeman	West Branch Local Schools	Beloit

Southeast Ohio, December 17, 2002
Eastland Career Center, Groveport, Ohio

Of the five participants listed at the end of this summary, two arrived late. The first half hour of the focus group was limited to three participants. These three were a career coordinator, an employment specialist with the Rehabilitation Services Commission, and a workforce development specialist. The two who were late were both guidance counselors. They arrived within minutes of each other and were given a chance to comment on the questions that had been discussed. Their comments are incorporated in the summaries for the separate questions.

Do you see a need to have OCIS available via the Internet so any resident of Ohio could use it without cost?

The participants saw value in all residents having Internet access to OCIS, but one qualified her endorsement with "at what cost." Will the benefits of such access justify the cost of making it available? The workforce development and Rehabilitation Services representatives raised

the concern that wide usage by individuals might overload server capacity and make it difficult for agency users to access service. If this were to become a problem, one solution would be to limit home access to after normal business hours.

One guidance counselor said that students rarely access OCIS from his school. They only have one study hall per day and they use that to study. If they go to the library or media center, it is typically for class assignments, not to access OCIS. If they do access it, it is usually from home using the ID and password provided by the school.

One big advantage of Internet access would be to allow parents to see the same information their children are using. The education representatives and the workforce development representative especially endorsed this. Assisting students in career planning is a basic function of schools. Youth programs supported by the Workforce Investment Act also want to get parents involved in the career planning of their children. When parents are involved, the chances the plans will be carried out increase significantly.

The Rehabilitation Services representative noted that much of the same information is available on other websites, but OCIS brings it all together. In one search, it is possible to go from identifying occupations of potential interest, to find out more about their requirements, working conditions and wages, to examine likely future demand, and then to locate programs to prepare for the occupations and possible sources of financial aid. Having all this information linked together is the unique feature of OCIS.

If OCIS were available to all residents on the Internet, what would be the best ways to inform potential users about it?

The participants did not see a real need for publicizing OCIS to the general public. Those with an interest are students planning careers and adult seeking new directions, but most adults have little interest in what OCIS contains. The schools and agencies that help people with careers should be the prime targets. If there were to be attempts to reach more people, the most appropriate place for newspaper ads would be in the help wanted section.

Key considerations in any awareness initiative are how much does the Department of Education want to spend and whom does it want to reach. Target audiences have to be identified and balanced against the resources available to reach these audiences. When asked to suggest

who the target audiences should be, one response was "students and people in transition."

OCIS is perceived and marketed primarily as a tool for students. There are many other potential users who should be made aware of the kind of information it contains.

The workforce development representative said "Many people may be aware of OCIS, but they are not using it because they don't realize what a wonderful tool it is." He said that he had worked in the field for 18 years, but it was not until he started to train counselors for one-stop centers to use OCIS that he realized it should have been promoted and marketed far more than it has been. He added that dislocated workers are a group that could benefit significantly either in the search for occupations similar to those they had lost or for sources of re-training.

One of the guidance counselors added that the situation is similar in his high school. Teachers and counselors are aware of OCIS, but tend not to use it. He said they tend to see OCIS as a "stepchild" to the more costly proprietary systems that they use more extensively.

Will having OCIS available to all residents via the Internet cause any problems for those who now provide access?

No real problems are anticipated. OCIS is basically an information source and people may be able to use it without ever contacting any of the traditional providers of career services.

One option would be to make public libraries the site for expanded Internet access. How effective do you think this approach would be?

Virtually all comments agreed that limiting public Internet access to libraries would not reach all the people who need it. Many people never visit libraries. Even for those who do, there is considerable demand for computers and it is typically hard to find one not in use.

Do you think a person who has no experience with OCIS could use it over the Internet without assistance?

Some sections may cause problems, but navigation is basically point and click. The question was raised whether a help desk would be available. The facilitator reported that the Northeast focus group had suggested

training librarians to deal with the most frequently asked questions, and asked if the group had any other ideas. The participants liked the idea of training librarians who are typically available in the evening and on weekends. The participants did not see a need for a 24-hour help desk because obtaining career information is not an emergency situation.

The workforce development representative sees many similarities between OCIS and Ohio JobNet, which also was not used very much until one-stop centers were required. Now more people are interested. He developed a guide to using JobNet which can be accessed on-line. The guide is very specific, step-by-step. The other participants endorsed this approach. They thought it would encourage increased usage among those who know of OCIS but have never really used it. A guide may also lessen the need for training and additional staff.

The self-directed search for occupations matching one's interest can be a problem because it often eliminates all possible choices. One suggestion is to provide an explanation of the matching procedure that indicates how each successive choice make the number of remaining options smaller and smaller. If the search yields no matches, suggestions on how to expand one's choices would also be helpful.

Some searches lead to occupations for which preparation can be obtained at either the 2-year associate or 4-year baccalaureate levels. A counselor would like the system to offer a brief presentation of the advantages and disadvantages of each level.

The Rehabilitation Services representative noted the importance of users understanding that the matching of interest with occupations is based on statistical averages. Users should be informed that if they are willing to make the investment of their time and money in preparation, they can qualify for many kinds of jobs for which they do not have a statistical match.

If OCIS is to be offered to all residents of Ohio on the Internet, what type of identification could be required to verify that those requesting access are actual residents?

The discussion covered a number of possible identifiers, such as driver license, state issued ID card, and library card but the consensus was that none of these is foolproof. Another possible approach is to ask a user to register on-line and then send the access information to the address entered in the registration. This, of course, would delay access and require considerable addition work and expense to prepare and mail

the letters. It would also be possible to ask users to enter their addresses, and block access if the state entered was not Ohio.

An alternative was to eliminate those components of OCIS that are restricted to residents of the state from the version that is made available via the Internet without ID or password.

One Wish for OCIS

To conclude the session, the participants were asked the "one wish" they would have for OCIS, the one thing they would most like to see become reality.

- ✓ I would like to see it available free for everybody because I think it is an awesome one-stop tool.
- ✓ Market it so that everybody knows it is there. Get the word out and once people experience it, they will realize how valuable a tool it can be for their lives.
- ✓ Make it state-wide, free, so that not only students but parents and other adults can benefit.
- ✓ Keep it as updated as possible so that information is current.
- ✓ OCIS is not very flashy. There is an awful lot of reading, a lot of text. Add some appeals to the X-Box generation.

Other Comments

OCIS is a definite one-stop tool. The officials in the Ohio Department of Job and Family Services should be contacted to see is there is any Workforce Development Act money that could be used to make OCIS available statewide.

It would be helpful if the labor market projections in OCIS could be updated more frequently, especially when major events like, the Gulf War (Operation Desert Storm) and September 11 occur. These can have a major impact on the number and kind of job openings that will be available.

It may be expensive in the short run to make OCIS available to all residents without cost, but the long-run payoff could be substantial. If people make better career choices the whole society benefits. Unfortunately, we never follow up to measure the benefits that follow from good career planning.

Participants

Name	Representing	City
Lennie Conrad	Lancaster High School	Lancaster
Ann Dawson	Career Coordinators, ODE	Groveport
William Finn	Franklin County, DJFS	Columbus
Susan Moore	Hamilton Local Schools	Columbus
Charles Robinson	Rehabilitation Services Commission.	Columbus

Gwen Prillerman, Franklin County DJFS, had also accepted an invitation to participate but was prevented by work responsibilities.

Southwest OCIS Focus Group, January 8, 2003
Franklin High School, Franklin, Ohio

Ten people had agreed to take part in this focus group, but only seven actually did so. Of those participating, two were in workforce/economic development with chambers of commerce and the others were a manager of a one-stop center, a Rehabilitation Services Commission counselor, a career assessment specialist at an area career center, a teacher, and a librarian/media specialist.

Do you see a need to have OCIS available via the Internet so any resident of Ohio could use it without cost?

All participants saw a need for free Internet access. The two representing chambers of commerce were the strongest advocates. In Clermont County, the one-stop center is operated by a private company. Because of this, the center could not obtain access to OCIS. As an alternative, Sigi Plus™, published by the Educational Testing Service, was purchased.

Both of the chambers of commerce represented in the focus group serve a local labor market that includes parts of three states (Cincinnati-Northern Kentucky-Southeastern Indiana). They would like to see standardization of the information being used for career planning and job seeking across the three states. One of the representatives said she

thinks that information paid for by the public should be available to the public. It was their understanding that Indiana and Kentucky currently provides Internet access to systems similar to OCIS.

> [The Indiana and Kentucky state agencies responsible for the counterpart to OCIS in their states were contacted to determine what they make available via the Internet. Indiana has the same career system as Ohio, but it does not include IDEAS or the sorting routines that must be limited to the residents of a state. What Kentucky has on the Internet is somewhat different. It is managed by its Department of Employment Services and includes labor market information and job listings similar to that provided by the Ohio Department of Job and Family Services at this URL: http://lmi.state.oh.us.]

The Rehabilitation Services representative was not aware that OCIS is available online. All of his access is through the program loaded on his personal computer.

Parents and individuals making career changes were mentioned as other groups that would benefit from general Internet access. Many parents who come to career planning workshops have never heard of OCIS. With rapid economic change, most adults will need to change careers and could benefit from the information OCIS contains. As OCIS is used more widely in schools, recent graduates may be more likely to use it when they have to make career changes than has been the case in the past.

Groups that currently do not have access include private organizations serving economically disadvantaged, such as Urban League and Catholic Social Services, and private schools. [Private non-profit organizations can currently purchase site licenses. Only for profit organizations cannot.] Hispanics are traditionally underserved, because few agencies have Spanish speaking staff. One participant summed it up: "It is simply a 'no-brainer.' There are an infinite number of organizations who work with people with a focus on employment. This is a good tool that could help them and they don't have access."

Do you think a person who has no experience with OCIS could use it over the Internet without assistance?

It is becoming easier to use, but most participants think it is still a "complicated web." Job titles, especially missing job titles, were mentioned as a possible problem. Traditional occupations are not a problem, but if a job is new or not widespread, it may not be listed. Massage therapist is one such title. If OCIS were widely available and

users could submit questions via e-mail, it would be easy to track problems that users are having.

More up-front introductory material that provides an overview of the system would be helpful to a naïve user. Referrals to sources of additional personal assistance, such as schools or one-stop centers, would also be helpful. These referrals should be customized to the geographic location of each user.

If OCIS were available to all residents on the Internet, what would be the best ways to inform potential users about it?

The emphasis should be on informing the staff of agencies who serve people preparing for or changing careers. Schools, one-stop centers, chambers of commerce, Urban League, and libraries were mentioned. The Rehabilitation Services representative suggested a brochure describing the system that could be passed out by agencies. He noted that his agency serves 20 to 30,000 clients per year.

The discussion of this question evolved into exploring ways to reach those who do not access to OCIS at present. Simply making OCIS generally available over the Internet will not serve economically disadvantaged people who do not have computers of Internet access in their homes. There should be an emphasis on contacting neighborhood centers and faith-based organizations that make computers available to such clients to inform them of OCIS availability. The newsletters of such organizations would be a good medium.

Will having OCIS available to all residents via the Internet cause any problems for those who now provide access?

The group anticipated no problems arising. Some of the more active users of OCIS thought general Internet access would make their work easier. They would ask their students and clients to do some preliminary exploration using OCIS and then discuss their results. This would save much of the time they spend doing searches with their clients.

An example of a potential problem, the occupational sort eliminating all possibilities, was raised by the facilitator. The active OCIS users said they have encountered this problem. One counselor said she has stopped using the sort because of this. She finds the IDEAS interest inventory to be more useful because it yields occupations grouped into high, medium, and low interest areas. Users can then click on the career clusters to find

more information about the occupations. "It is a seamless transition from the interest survey into investigating different job opportunities."

The suggestion was made, somewhat in jest, that when all occupations are eliminated, the option of public assistance still remains. The participant who made this comment added in a more serious vein that people must recognize that occupations need to provide a self-sufficient income. It is fine to realize one's potential, but doing so has to include earning a living.

Another comment was that there is a distinction between liking to do certain activities and being willing to do these activities. Someone may not like them but still be willing to do them. Being willing to do them opens many more potential opportunities.

One option would be to make public libraries the site for expanded Internet access. How effective do you think this approach would be?

The group endorsed increased access through libraries, but rejected this as the only point for general Internet access. Using libraries would not make OCIS available to all the private organizations that could benefit from it.

If OCIS is to be offered to all residents of Ohio on the Internet, what type of identification could be required to verify that those requesting access are actual residents?

This question led to an extended discussion of the IDEAS™ component of OCIS. IDEAS (Interest Determination, Exploration and Assessment System) is a career interest inventory. The licensing agreement for IDEAS and the sorting routines that assist users to select information requires that Internet access be limited to Ohio residents. The participants thought this was an insufficient reason to keep OCIS from Ohio residents. One suggestion was that all except the restricted components of OCIS be made available on the Internet and alternative access to the restricted components be provided. One such alternative would be to refer users to local sources such as schools, libraries, and one-stop centers. Another could be a restricted portion of the website for which a password would be required.

A utility account number, such as gas or electricity, was suggested as one possible identifier. One of the participants reported visiting a website

in Massachusetts where she could access many of the pages, but some required that she enter an account number from a utility in that state.

There were mixed judgments as to the value of IDEAS. Some participants said no-cost alternatives were available. North Carolina was mentioned as one state that provides an interest inventory without cost. The Rehabilitation Services representative said he never uses IDEAS with his clients. One participant, however, expressed strong support. She felt it is a good tool, especially if students have the reading ability it requires.

> [The North Carolina career information website (http://sol1.esc.state.nc.us/soicc/planning/c1.htm) was checked and it does provide access to the Self-Directed Search inventory developed by John Holland. Users can take the inventory online, but must pay a fee of $8.95 to obtain a report of their results.]

One Wish for OCIS

The manager of the one-stop center expressed a wish for general access to OCIS and that the system be user-friendly enough that anyone who had 30 minutes of prior computer usage would be able to get useful information. One of the chamber of commerce representatives reinforced this wish and added that she did not want to be from the only state in the labor market area that did not have a career information system available via the Internet to all its residents. She would also like robust hyperlinks to non-state education and training resources. She feels the present system is too limited.

The teacher in the group wanted some way to make the information more useful. Once users have identified occupations they are interested in, what do they do next? How do they find employers who hire workers in these occupations? How do they get jobs?

The librarian/media specialist would like to see links between occupations of interest and openings for such occupations at the local level and more information in OCIS about professional athletes.

The Rehabilitation Services representative wish is that all the information in OCIS be accurate. In previous versions of OCIS, the Bureau of Vocational Rehabilitation was listed as a scholarship, and this caused continuing problems for the agency. The Bureau can only provide services that have the potential to lead to employment for clients. They cannot pay for college for a client who is so severely disabled employment is not a possibility.

Other Comments

There should be a link from occupations to the kinds of courses necessary to prepare for them. Students often make no connection between the courses they take and the preparation needed for different occupations.

There should be more information in OCIS on military occupations.

Participants

Name	Representing	City
Rupa Emani	Fairfield Freshman	Fairfield
Julie Green	Warren County Career Center	Lebanon
Ted Groman	Clermont County Business and Workforce Resource Center	Cincinnati
Melanie Hart	Franklin High School	Franklin
Sherry Kelley Marshall	Greater Cincinnati Chamber of Commerce	Cincinnati
Steve Smith	Rehabilitation Services Commission	Cincinnati
Pam Wilson	Clermont Chamber of Commerce	Milford

Northwest, January 9, 2003
Millstream Career-Technical Center, South, Findlay Ohio

Seven people had agreed to take part in this focus group, but only five did so. Two of the five were guidance counselors in junior high schools and the others were a career coordinator for the school districts around Findlay, a supervisor with the Rehabilitation Services Commission, and the labor market analyst for 22 counties in northwest Ohio.

Do you see a need to have OCIS available via the Internet so any resident of Ohio could use it without cost?

In the course of introducing themselves, one of the guidance counselors noted that he has a parent-student conference with every eighth grade students at which the parents receives printouts produced from their students' searches on OCIS. He has been doing this for nine years, and every year parents ask if they can access OCIS from their home computers. The other counselor agreed emphasizing that OCIS exposes both students and parents to a variety of things available to them, "some of which they may never have thought of." The school in which this counselor works serves a low-income population only some of whom have computers in their homes. There is, however, an active branch library two blocks from the school where most of the students would have "very easy access."

The labor market analyst also supported Internet availability, because when he visits county departments of Job and Family Services and one-stop centers, virtually everyone he talks to about OCIS "is really excited about what they can get out of it."

The Rehabilitation Services representative said that even if OCIS becomes generally available over the Internet, those with least access will be low income adults who do not have computers in their homes. If these individuals have disabilities, such as limited vision, which make it difficult for them to use a computer, their access problems are compounded. Public libraries may serve some of these individuals, but computers in libraries are in high demand and often it is necessary to schedule their usage. When one-stop centers are fully established in all counties, they may provide the best access to clients with multiple barriers.

County Job and Family Services offices and adult education programs in career centers were mentioned as other accessibility resources. An extensive communication and training effort would be needed, however, to make staff in these offices familiar with OCIS and the kinds of information it can provide.

The career coordinator is unaware of much usage of OCIS in colleges. He suggested its availability be promoted at that level. Other populations with much need but little current access are adult and youth correctional facilities. [Those incarcerated at such institutions are not allowed access to the Internet. See discussion in chapter 2, page 5.] Charter school students and students being home schooled were other groups that could benefit from Internet access.

Do you think a person who has no experience with OCIS could use it over the Internet without assistance?

The first potential barrier mentioned was language. Individuals with poor proficiency in English will have difficulty using OCIS. The ability of online translators to assist users was noted. No one has tested the effectiveness of these translators, but skepticism as to their effectiveness was expressed.

It was suggested that an upfront tutorial should be available. Perhaps the tutorial provided with the CD version of OCIS could be put online in both a text and graphics version.

One current problem naïve users have with the CD version is the necessity of putting a name in to enter the system and then the same name to sign off. The labor market analyst has noticed that users in one-stop centers are sometimes confused by this requirement. He has made up small signs he puts on computers telling the users to enter anything, even an "X," and to enter the same thing when they sign off.

Another suggestion was for online support in the form of a list of frequently asked questions and directions as to whom to contact if additional assistance is needed. Local school websites were suggested as possible contact points. The technology coordinator could forward inquiries to those who work with OCIS each day. Small school districts are likely to welcome such contacts, because they are always looking for ways to get parents more involved. Large systems may be reluctant to make such a commitment.

If OCIS were available to all residents on the Internet, what would be the best ways to inform potential users about it?

School newsletters could reach many adults, even those who do not have children in school. Many districts, especially smaller ones, send these letters to all residents. This does not appear to be the case with the large cities such as Toledo. The mass media in Toledo do give the schools considerable coverage and it should be possible to get information about OCIS in the newspapers and on TV.

Words or phrases that are commonly used with search engines could be incorporated into OCIS to lead potential users to the website. A distinct logo would be helpful.

The labor market analyst distributed to the participants several handouts that he sends to schools and agencies that have clients who could benefit from using OCIS. These highlight the kinds of information that OCIS and the LMI Pro Suite can provide.

Will having OCIS available to all residents via the Internet cause any problems for those who now provide access?

One problem that was identified is inherent in any career planning: will jobs be available after one has obtained the education and training needed to enter those jobs? The system provides occupational projections, but they are for fairly large labor markets and there is no guarantee that they will be accurate.

The facilitator noted that other groups had discussed the occupational sort as a possible problem. Many times the answers given eliminate all possible jobs. The Rehabilitation Services representative said that this can be a problem for people with disabilities. With adaptive equipment these individuals can hold many jobs that these sorts eliminate. Typically, Rehabilitation Services counselors do not use the assessments in OCIS. More extensive assessments are purchased as needed.

The labor market analyst says the first eight questions in the occupational sort are the ones that really narrow the number of jobs. He tells users to skip those first eight and only go back to them if the activities they prefer do not yield a useful list of occupational options.

One of the guidance counselors expressed a hope that if all parts of OCIS cannot be on the Internet, at least the basics be available. "Let's walk before we run and get the basic things out there. That's going to be so helpful to parents working with their kids." If all components cannot be on the Internet, users could be referred to schools and other agencies that can provide what is not generally available.

One option would be to make public libraries the site for expanded Internet access. How effective do you think this approach would be?

The concern was raised that this approach would not serve rural counties where libraries are rare or possibly nonexistent. In addition, rural areas do not have the public transportation that many disabled people need.

The guidance counselor from Toledo thought that libraries would be a good first. The libraries have high usage throughout all areas of that city.

If OCIS is to be offered to all residents of Ohio on the Internet, what type of identification could be required to verify that those requesting access are actual residents?
A possible method is through school websites. Users could be asked to choose school district in their geographic area that have OCIS access. They could be instructed to contact a staff member at that school to obtain an ID and password. The career coordinator said he would be willing to provide such information for the districts he serves.

Other suggestions were ZIP codes, county number used for taxation, Social Security, and driver's license numbers. It was conceded, however, that there is no foolproof method that uses public information, such as ZIP codes, and many people may be reluctant to enter personal information such as their Social Security numbers.

The home page of the website could explain that users must be residents and then require some type of identification that a nonresident would have to seek, such as a ZIP and telephone area code. This is likely to deter the casual browser, but not someone who really wants to get in.

One Wish for OCIS

The labor market analyst would like to see "adequate PR:" a publicity campaign to make people aware of what OCIS is and how it can be used. One of the guidance counselors seconded this to "get people to know that it is there when they want it and need it."

The second guidance counselor would like assurance that OCIS will be available every year so he did not have to worry if his district will have the funds to buy it.

The career coordinator would like information on how much the system is used. Each year he provides it to the schools in his districts, but how much do they use it?

The Rehabilitation Services representative's wish was for OCIS to be available to everyone regardless of any sensory or physical limitations.

Other Comments

One of the guidance counselors requires all his eighth grade students to do OCIS searches as the basis for selecting the courses they choose for the ninth grade. These searches should yield a list of possible occupations that is printed out and given to parents during a student-

parent conference. These conferences are required for all eighth grade students.

The labor market analyst has produced a manual for the visually impaired to access the online, text-only version of OCIS using the Jaws Screen Reader. This manual is available on tape and in Braille.

The comment was made that the labor market information is the best available, but even that is three to five years old. This raises the continuing question of whether jobs will be available after individuals acquire the preparation needed to enter these jobs.

Participants

Name	Representing	City
Dick Gervais	Wynford Jr. High School	Bucyrus
Gary Greer	Career Development Coordinator, ODE	Findlay
Jim Lipps	Rehabilitation Services Commission	Lima
Sue Gorney Welch	Toledo Public Schools	Toledo
Don Wonnell	Labor Market Information, Ohio DJFS	Toledo

APPENDIX C

INTERVIEWS WITH OTHER intoCAREERS STATES

The following are brief summaries of the interviews conducted with CIS officials from states that are part of the intoCAREERS network. These summaries were reviewed by the officials to check the accuracy of the information reported.

Alaska

URL: http://akcis.org/

Interview: Dean Rasmussen, Department of Labor and Workforce Development, 907-465-4500, February 13, 2003

The Alaska CIS is managed through a partnership between the Alaska Department of Labor and Workforce Development and intoCAREERS. The department provides state leadership, occupational analyses and some training. The Alaska CIS website links with intoCAREERS for information on products, training, and technical support. All Internet usage is from the University of Oregon servers.

Linkage to the Internet version is provided from the home page of the Alaska CIS website. There is a ""Logon AKCIS" tab at the top of the page that links to a standard sign-in page with instructions to "Use the username and password you obtained from your school or organization."

Purchase of a site license provides CDs with Windows and Macintosh versions of the CIS plus access to the Internet version. The standard site license is $750. This drops to $450 for sites with fewer than 100 students or clients, and individual prices are quoted for rural, district-wide licenses. The Department of Labor and Workforce Development receives the Perkins Section 118 allocation which it uses, together with subscription fees, to fund the CIS.

Arizona

URL: http://www.ade.az.gov/cte/azcrn/azcis/default.asp (This address does not directly access the CIS. It provides an overview of the components and provides a link to an application form in Adobe Reader format.)

Interview: Susan Mellegard, Arizona Department of Education, 602-542-5353, February 6, 2003

To obtain access to the Arizona CIS (AzCIS) an applicant must download a one-page form and provide contact information to register for the system. The applicant indicates if they want an AzCIS CD, which works on Macintosh and Windows, a set of 6 occupational video CDs, and whether or not they plan to use the Internet version. Ms. Mellegard personally reviews each of these applications and, for those who meet the state's criteria, sends each a unique username. All users have the same password.

Distribution of the basic CIS is free of cost to all schools, colleges, one-stop centers, rehabilitation services, correctional institutions, and similar nonprofit agencies. A separate order form is provided for IDEAS Interest Inventory for which a $125/site license fee is charged. That order is sent directly to CIS/intoCAREERS, to activate the component within the AzCIS disc and/or Internet version for the purchasing site.

Access to the Internet version is provided from the University of Oregon server.

Funds authorized by Section 118 of the Carl Perkins Act are used for AzCIS.

Georgia

URL: http://www.gcic.peachnet.edu/

Interview: Les Janis, Georgia Career Information Center, Georgia State University, 404-651-0153, interviewed December 30, 2002

The home page of the Georgia CIS has a box with the legend "Click here to enter GCIS, Georgia Career Information System." This link leads to a pop up with boxes to enter username and password. If an invalid name or password is entered, the user receives the following message:

> If you are affiliated with a school or agency that uses GCIS, you can obtain the ID and password from the person at your school or agency who is responsible for coordinating GCIS.

Georgia has its own server for Internet access and does its own authentication of usernames and passwords.

Internet access is provided to those that purchase site licenses that range from $150 per year for very small to $975 for large schools. This is

a per school fee, but there is a cap of $15,000 for any district or state agency that wishes to install GCIS in many locations. The fee pays for training in CIS, CDs for Windows and Macintosh computers, and Internet access. Fees from site licenses cover approximately 90 percent of the cost of operating the system.

Idaho

URL: http://www.idahocis.org

Interview: Chuck Mollerup, Idaho Career Information System, 208-334-3705, February 5, 2003

The home page for the Idaho CIS has a logo in its upper left corner that tells the user to "Click here for CIS on the Internet." When the cursor is placed on the logo, a box appears with the message:

> You will need your username and password to enter eCIS. If you do not have that information, contact your referral school or agency for access information.

When the logo is clicked, the standard intoCAREERS sign-in page appears.

Idaho has a sliding fee scale for site licenses based on the number of students or clients to be served. Visitors to the website are instructed to "contact CIS" for cost information. The words in quotes are a link to the e-mail program on the visitor's computer. The minimum fee is $650. The fees include CDs plus Internet access. The IDEAS interest inventory can be added at a price of $200 per site.

The University of Oregon servers are used for Internet access

Mr. Mollerup reports that CIS is in 94 percent of high schools, most colleges and universities, and 100 percent of job service centers, vocational rehabilitation offices, and correctional institutions.

Illinois

URL: http://www.ILWorkInfo.com/ICRN

Interview: Mitchell Daniels, Illinois Department of Employment Security, 217-785-2647, January 30, 2003

Illinois provides general public access to the Internet version of its CIS for all residents who enter valid ZIP codes. The first page that appears asks visitors to enter their username and password. If users do not have this information, they are instructed to "Click Here" which links them with a page where they select a state from a drop-down box and enter a ZIP code in a second box. If the ZIP is from Illinois, a page appears with a username and password and a link back to the sign-in page. The standard intoCAREERS first page appears when users enter the system.

The state identifying information is used to protect access to Peterson's database on postsecondary institutions. IDEAS is made available only to registered users. These represent about 300 of the 800 high schools that use the Illinois CIS.

Funding comes from several sources: Section 118 of the Perkins Act, the Workforce Investment Act, allocations from the three state educational agencies, and a small portion from user fees. Even though the CIS is available on the Internet, Illinois still sells site licenses to large high schools that want to load it on their own computers. The fee is $450 per site.

Illinois has used bookmarks, posters, and association newsletters to publicize Internet access. The bookmarks are printed on heavy duty stock. They list the URL and the kinds of information that can be obtained. Posters have been widely distributed to schools, agencies and libraries. The initial distributions invited recipients to request additional copies and many did so. The state PTA circulated an announcement about Internet access to its local chapters and encouraged them to include it in their newsletters.

Indiana

URL: http://icpac.indiana.edu

Interview: Scott Gillie, Indiana Career & Postsecondary Advancement Center, 812-855-8475, January 29, 2003

Indiana is the only state in the intoCAREERS network that provides open Internet access to anyone who visits its website. From 1997 to 1999 the Indiana CIS was on the Internet with an Indiana resident identifier required. When users had to enter the identifier, 90 percent did not do so. When Indiana went to open access in 1999, unique user sessions went from 5,000 to 25,000 per month and they are now are running about 100,000, with an average time of 15-17 minutes per session. This

session average has held for several years. January 2003 set an all-time usage record with over four million hits and 75,945 unique visitors.

With the increases in simultaneous access it was necessary to shift the system to a server with a higher capacity. It was also necessary to renegotiate some of the licensing agreement. Indiana did not license IDEAS because of the separate fee per user. It also developed its own searching and sorting utilities to match colleges and occupations with the interests and preferences of users.

The Indiana site has a quite different "look" than the standard intoCAREERS site. A user who is familiar with the intoCAREERS look would not think that Indiana is part of that network.

Indiana never funded it CIS with site licenses. It has always been funded directly by the state through a combination of Perkins Section 118 and state funds.

Massachusetts

URL: http://www.masscis.intocareers.org/login_noip.asp

Interview: Peter Maloy, Massachusetts Department of Employment and Training, 617-626-5725, January 30, 2003

The Massachusetts CIS went online for public access on January 27, 2003, just three days before the interview. Access is limited to those who can provide a valid ZIP code for cities and towns listed on a drop-down box on the home page. The page also asks users to choose from a second box the category that best describe them: student in college, high school, middle/junior high school, or elementary school; educators, counselors and parents at these same levels; job seeker, job/career counselor, librarian, or other. The page that appears after sign in is the standard CIS home page from intoCAREERS.

To publicize Internet access, the MassCIS office has prepared a mailer that will be sent to school counselors and librarians throughout the state. The mailer lists the components of CIS and provides the access information.

The system is funded directly by the Department of Employment and Training. Since making MassCIS available on the Internet, site licenses will no longer be sold. If users want the CD version, these will be available at a cost of $125.

Minnesota

URL: http://cfl.state.mn.us/mcis/index.shtml

Interview: Terry Hamm, Department of Children, Families, and Learning, 651-582-8492, February 7, 2003

The Minnesota CIS can be accessed via the Internet but there is no direct link from the URL listed above. The heading of the description of the MCIS products includes the word "Internet" together with "Windows" and "Macintosh," but this is the only reference to the Internet on the website. Users who purchase site licenses receive CD they can use on their own computers and usernames and passwords to access the Internet version, which is housed on the University of Oregon servers.

The Minnesota system is funded entirely by user fees which range from $700 for schools with less than 200 students to $1,130 to schools with 800 or more. A user that purchases 20 or more licenses is charged $970 per site. Workforce development centers are charged $500 per center for Internet access.

MCIS receives none of the Perkins Section 118 funds directly. The state entity that receives those funds is a partnership that includes MCIS and representation from many of the state departments and higher education institutions. This partnership has a website with the acronym ISEEK, which stands for Internet System for Education and Employment Knowledge.

Mr. Hamm reports that a recent survey of MCIS users found very high satisfaction rating of Internet access. Mr. Hamm anticipates that the advantages of Internet access will eventually drive out CDs. Many of the schools in Minnesota have limited technical support for their computers. When these schools encounter difficulty loading MCIS from CDs, they typically lack the technical expertise needed to resolve the problems. Internet access reduces the time spent by technical staff to install the CD version and troubleshoot any technical problems with it.

Montana

URL: http://mcis.dli.state.mt.us/

Interview: Annette Miller, Department of Labor and Industry, 406-444-2741, February 3, 2003

Starting with the 2002-03 school year, Montana's CIS has been available over the Internet to students and their parents through the Student Assistance Foundation of Montana. The foundation pays for the right to distribute usernames and passwords to residents of Montana so they can access the CIS from their homes. The homepage of the foundation (http://www.programs-safmt.org/Programs/) has a "click here" box that takes users to a page where they enter personal information. When this is submitted, the foundation sends the username and password to the e-mail address entered.

Montana continues to sell site licenses to schools, postsecondary institutions, and state and local agencies involved in workforce development. The fee for schools varies from $575 for school with enrollments less than 50 to $1,150 for schools with 200 or more. Multi-school districts are charged $2,000. Agencies and postsecondary institutions are charged $1,150. Members of registered consortia, which are listed on a drop-down box, are eligible for a 20 percent discount.

Nebraska

URL: http://ncis.unl.edu/20.htm

Interview: LeeAnn Roth, Nebraska Career Information System, University of Nebraska-Lincoln, 402-472-2544, February 17, 2003

As in Minnesota, there is no direct link to the Internet version of the Nebraska CIS from the URL listed above. Directions for Internet access are provided along with the CD versions as part of the site license package. The system is housed on the University of Oregon servers.

User fees fund approximately half the cost of the NCIS with the balance coming from the state's Perkins Section 118 allocation. The cost for the standard CIS package is $780, CIS standard plus Skills or IDEAS is $900, and with both it is $1,000.

Dr. Roth is an advocate of user fees. She thinks they "enhance the credibility of the product." Because users pay for it, they value it more highly than if it were free. Nebraska with its predominantly rural, low density population does not represent an attractive market to alternative providers of career services. Dr. Roth would want an iron-clad guarantee of funding from other sources to discontinue user fees.

Nevada

URL: http://detr.state.nv.us/ncis/index.htm

Interview: Darragh Huggins, Department of Employment, Training, and Rehabilitation, 775-684-0378, February 5, 2003

The home webpage of the Nevada CIS has a link to its Internet version prominently displayed in the upper right hand side of the screen. Beneath the link there is the following message:

> Nevada Residents Can Now Use NCIS on the Internet for no fee. To Get Your USERNAME & PASSWORD, submit an E-mail with your name and Nevada address.

A click on "E-mail" in this message links to the e-mail program on the user's computer and enters the address to which the user's name and address should be sent. A staff member responds to each e-mail received by issuing the same username and password.

The NCIS website has lists organized by county of schools and other locations where the public can access the system.

This is the last year that Nevada will make its CIS available via CDs. This decision was driven by two primary considerations: how best to use its limited CIS resources, and the advantages of Internet delivery. As was reported in Minnesota, many schools do not have technical support to overcome problems encountered when loading NCIS from CDs. In addition, the Internet version is much easier to keep up to date.

The only complaints that Ms. Huggins ever hears about Internet delivery is slow transmission from those who access NCIS by modem using telephone lines. Nevada uses the University of Oregon servers.

Less than half of the funding for NCIS comes from Perkins Section 118 allocation with the balance provided by the state. Nevada does not charge site license fees. Sites that want IDEAS available over the Internet purchase this component directly from intoCAREERS.

Oregon

URL: http://oregoncis.uoregon.edu/

Interview: Cheryl Buhl, Oregon Career Information System, University of Oregon, 541-346-2345, February 6, 2003

The CIS developed in Oregon was the source of the systems that have been adopted by the other 13 states in the intoCAREERS network, not Washington (see next state summary). The staff that operates the system is located at the University of Oregon, but OCIS is self-supporting with its own policy board. OCIS is also independent of intoCAREERS, which is the national office of the 15-state network.

Online access to OCIS is the first of four major categories listed on the home page of the website. Clicking on this line links visitors to a page that informs them that a username and password are needed and that these should be obtained from their school or other career service providers.

Oregon has a complex pricing structure for different types of users, schools, postsecondary institutions, workforce agencies, etc. The webpage does not list prices. Visitors are directed to contact the customer and user services to obtain a telephone or e-mail quote or a print catalog.

The Oregon CIS has its own servers. Ms. Buhl has found that Internet users have fewer questions and support requests than those who use CDs. She eventually plans to replace the current CDs with a CD that will have the Internet version.

Ms. Buhl's major concern about Internet access is individual use of assessment tools without professional explanation and interpretation. She reported that the office that manages the Indiana CIS provides a telephone "hotline" that offers some mediation, along with other personal telephone assistance. The manager of the Indiana CIS, Scott Gillie, in a personal communication (February 26, 2003), confirmed that his office operates a "toll-free telephone service that provides comprehensive information about postsecondary options, careers, and financial aid." This service averages 60,000 contacts annual by telephone, mail and e-mail. It is to Mr. Gillie's knowledge "the most comprehensive telephone-based guidance information service available anywhere."

Washington

URL: http://wois.org/

Interview: Bert Palmer, WOIS/The Career Information System, 360-754-8222, February 13, 2003

The Washington CIS is managed by a private, nonprofit organization that is funded through sale of its products. The yearly license fees for CIS range from $350 to $1,400 depending on the number of students/clients being served. This fee covers the standard CD versions as well as Internet access.

A link to the Internet version is featured on the homepage of the WOIS website. On the top right hand side of the homepage there are several links, including "On-line Information." Clicking this link takes the user to a sign in page with the standard username and password boxes and the following explanation:

> Access to WOIS career information on-line is provided as a service for those of our users who hold a current site license for our software and, therefore, passwords are only available to those users. If you would like more information on using our products, please see our product guide or contact our Customer Service staff.
>
> If you do not have a site license and live in Washington State, please see the list of places where WOIS information is available for use by the general public.

The underlined words are links that take the visitor to the relevant webpages or the e-mail program on the user's computer. The list of places is a complete listing of the addresses and telephone numbers of libraries and other entities that have purchased site licenses that may provide public access. The user is advised to call to determine usage policy.

Washington has its own server.

Mr. Palmer thinks word-of-mouth is the most effective way of publicizing Internet access. The Washington CIS has been available on the Internet for a little over six years and he estimates the number of visitors has more than doubled in that time period. To publicize increased access in Ohio, he would focus on schools, libraries, and agencies providing career services. It is his experience that Internet access leads to fewer, not more, requests for customer service.

[The state of Washington does not use intoCAREERS CIS software and, by this definition, is not a CIS Operator. It does, however, license intoCAREERS occupational information, and thus, it is considered a member of the CIS Network.]

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